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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,897	08/21/2003	Takako Ozawa	Q76398	6409

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EXAMINER

ANGEBRANDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/644,897	Applicant(s) OZAWA ET AL.	
	Examiner Martin J. Angebrannt	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,3-6,8-16 and 18-19 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Ozawa et al. '018.

Ozawa et al. '018 teach a polycarbonate substrate with a thickness of 1.1 mm, a groove depth of 100 nm groove width of 120 nm and a track pitch of 300 nm, the reflective layer of Ag sputtered at a power of 0.3 kW and an Argon flow of 0.3 cm³/sec to a thickness of 100 nm, a recording layer of a phthalocyanine dyes (ORAZOL BLUE GN) is coat on this and a 80 nm thick cellulose acetate cover layer affixed via an UV cured adhesive layer. The Sra was 0.6 nm and no projections over 15 nm in height were found. (the sputtering conditions are very similar to those of example 4 of the instant application). See also examples 2 (which uses Al) and 3 (which uses Ag). And references examples 1-18 and 19-21. The use of other substrate materials

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is disclosed. (2/32-38). The use of various reflective layer materials is disclosed. (4/1-12). The use of underlayers having thicknesses of 0.1 to 10 microns between the reflective layer and the substrate is disclosed. (3/1-6). The use of various dyes for the recording layer (4/14-21), as well as the other additives for the recording layer including antifading agents, such as singlet oxygen quenchers, binders, and the like (4/14-5/37).

4. Claims 1-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al. '018.

It would have been obvious to modify the cited examples of Ozawa et al. '018 by adding an underlayer having a thickness of 0.01 to 10 microns to improve smoothness and adhesion of the reflection layer (2/53-3/6), use other reflective layer materials, substrate materials, or dyes with a reasonable expectation of forming useful optical recording media based upon the disclosure of equivalence and/or to add quenchers to the recording layer to reduce fading of the dye layer.

5. Claims 1,3-6,8-16 and 18-19 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Ishida et al. JP 2003-187498.

Ishida et al. JP 2003-187498 teach a polycarbonate substrate with a thickness of 1.1 mm, a groove depth of 100 nm groove width of 120 nm and a track pitch of 300 nm, the reflective layer of Ag sputtered at a power of 0.3 kW and an Argon flow of 0.3 cm³/sec to a thickness of 100 nm, a recording layer of a phthalocyanine dyes (ORAZOL BLUE GN) is coat on this and a 80 nm thick cellulose acetate cover layer affixed via an UV cured adhesive layer. The Sra was 0.6 nm and no projections over 15 nm in height were found. (the sputtering conditions are very similar to those of example 4 of the instant application). [0042-0044]. See also examples 2

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(which uses Al) and 3 (which uses Ag) [0045-0046]. And references examples 1-18 and 19-21 [0057-0062]. The use of other substrate materials is disclosed. [0008-0009]. The use of various reflective layer materials is disclosed. [0018]. The use of underlayers having thicknesses of 0.1 to 10 microns between the reflective layer and the substrate is disclosed. [0010]. The use of various dyes for the recording layer [0019], as well as the other additives for the recording layer including antifading agents, such as singlet oxygen quenchers, binders, and the like [0019-0027].

6. Claims 1-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. JP 2003-187498.

It would have been obvious to modify the cited examples of Ishida et al. JP 2003-187498 by adding an underlayer having a thickness of 0.01 to 10 microns to improve smoothness and adhesion of the reflection layer (2/53-3/6), use other reflective layer materials, substrate materials, or dyes with a reasonable expectation of forming useful optical recording media based upon the disclosure of equivalence and/or to add quenchers to the recording layer to reduce fading of the dye layer.

7. Claims 1,3,4 and 8-17 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Mizushima et al. '596.

Mizushima et al. '596 in example 1 discloses a 1.2 mm thick grooved polycarbonate substrate, coated with an 100 nm Ag, Au, Pd, Pt or Al based reflective layer coated at a pressure of less than 1 Pa and a power of less than 1 kW, followed by a dielectric layer, a 15 nm AgInSbTe phase change recording layer, a second dielectric layer and a 0.6 mm thick polycarbonate substrate adhered via an adhesive layer. [0067-0085]. Example 2 is similar with

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the thickness of the polycarbonate substrate being 1.1 mm and grooves adapted for use with a 405 nm laser.

8. Claims 1,3,4 and 8-16 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Miki '000.

Miki '000 describes a reflection layer formed on a substrate with a sputtering power of 0.2 kW for the AgPdCu target, 0.6 kW for the Al target and a pressure of 0.18 pascals, resulting in a roughness of less than 0.75 nm and a thickness of 50 nm, followed by a dielectric layer, a magneto-optic recording layer, a second dielectric layer and a protective layer. The track pitch was 0.39 microns and the thickness of the substrate is 1.2 mm [0051-0081]. The use of other substrate materials is disclosed. [0027].

9. Claims 1,3,4 and 8-17 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Ohno '443.

Ohno '443 in example 2 discloses a 1.2 mm thick grooved polycarbonate substrate, coated with an 120 nm Ag based reflective layer coated at a pressure of 0.28 Pa and a power of 200 W (as in example 1), followed by a dielectric layer, a 15 nm GeSbTe phase change recording layer, a second dielectric layer [0117-0118]. Example 4 is similar with the guide grooves being 43 nm deep, 0.3 microns wide and a pitch of 0.6 microns and adapted for use with a 404 nm laser and the Ag sputtered at the same pressure at a power of 500 W. The smoothness of the reflective layer is described as 4 nm, preferably less than 2 nm. [0058]. The reflective layer is described as being applicable to dye based recording media as well as magneto-optic recording media. [0064-0065]. The use of conventional layering to read from the substrate side, or the reverse order to read from the layer side is disclosed. [0005-0006,0079].

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10. Claim 1,3-6,8-16 and 18 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Kakuta et al. '511.

Example 1-1 teaches a polycarbonate substrate with a thickness of 1.1 m, a groove width of 150 nm and depth of 40 nm, coated with an Ag reflective layer coated at 0.2 kW and 50 cm³/sec to a thickness of 100 nm, a recording layer of a phthalocyanine dye (ORAZOL BLUE GN) is coat on this and a 70 nm thick polycarbonate cover layer affixed via an UV cured adhesive layer. [0156].

11. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Ohno '443 or Mizushima et al. '596, in view of Ohkubo et al. '857 and Yabe et al. '620.

Ohkubo et al. '857 teach optical recording media optimized for 405 nm, where the pitch of the grooves is 0.3 microns, the width is 100 nm and grove depth of 18-32 nm (5/3-4). The use of an adhesion layer (19) between the reflective layer (16) and the substrate is disclosed with respect to figure 3. (4/10-40). The use of this arrangement with other types of recording layers including dyes based recording layers is disclosed. (8/1-7).

Yabe et al. '620 teach underlayers having thicknesses of 0.1-50 microns to allow formation of the pregrooves. (4/53-66). Various substrate materials are disclosed including acrylic resins, vinyl resins, polycarbonates and epoxies (4/9-22).

It would have been obvious to one skilled in the art to modify the cited examples of either Ohno '443 or Mizushima et al. '596 by adding an underlayer as taught by Ohkubo et al. '857 and Yabe et al. '620 and to provide that layer in the thickness of less than 20 based upon the teachings of Yabe et al. '620 with a reasonable expectation of improving the adhesion between the reflective layer and the substrate. Further, it would have been obvious to use other known

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substrate materials such as those disclosed by Yabe et al. '620 with a reasonable expectation of forming a useful optical recording medium based upon the disclosure of equivalence.

12. Claims 1,3,4 and 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable Ohno '443 and over Kawakubo et al. '656.

Kawakubo et al. '656 teach write once recording media where a substrate is provided with the reflective layer, (12) a dyes based recording layer (14) and the protective layer (7/27-8/21).

It would have been obvious to one skilled in the art to modify the examples of Ohno '443 by using dyes based recording layers as taught by Kawakubo et al. '656 with a reasonable expectation of forming a useful optical recording medium.

13. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno '443, in view of Kawakubo et al. '656, further in view of Ohkubo et al. '857 and Yabe et al. '620.

It would have been obvious to one skilled in the art to modify the optical recording media resulting from the combination of Berneth et al. '807 and Ohno '443 by adding an underlayer as taught by Ohkubo et al. '857 and Yabe et al. '620 and to provide that layer in the thickness of less than 20 based upon the teachings of Yabe et al. '620 with a reasonable expectation of improving the adhesion between the reflective layer and the substrate. Further, it would have been obvious to use other known substrate materials such as those disclosed by Yabe et al. '620 with a reasonable expectation of forming a useful optical recording medium based upon the disclosure of equivalence.

14. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application

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claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

15. Claims 1-16 and 18-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6924018. Although the conflicting claims are not identical, they are not patentably distinct from each other because The claimed subject matter claimed, particularly those claims utilizing product by process steps which inherently produce media bounded by the instant claims. The methods of characterizing the media differ only slightly from that of the instant claims.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fukuzawa EP 1139340 and Yashiro et al. JP 2000-195103 teach Ag reflective layers for optical recording media formed at low pressures and sputtering powers.

Aspen et al. JP 2001-110104 teaches the formation of smooth Ag films as reflective layers for optical recording media.. (abstract)

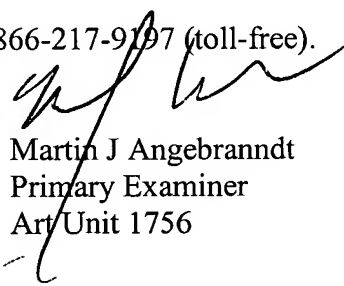
JP 04-251453 teaches Au reflective films sputtered at low pressures and temperatures for optical recording media.

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17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J Angebranndt
Primary Examiner
Art Unit 1756

12/22/2005